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Does Matcha Beat Green Tea in Health Benefits?

Devotees of the powder cite its delivery of antioxidants



Using a bamboo whisk to prepare a cup of Encha matcha tea. *PHOTO: MARTIN RAMIN/THE WALL STREET JOURNAL, STYLING BY ANNE CARDENAS*

By **LAURA JOHANNES**

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The Claim: Matcha, a bright green powder made from tea leaves, is mixed with water and consumed entirely, unlike with brewed tea where the leaves are left behind. The result is that matcha delivers more nutrients, including antioxidants—which may help prevent cancer, cardiovascular disease and diabetes, say companies that sell the tea.

The Verdict: A published report cited by some companies found a serving of matcha contained 137 times as much of an antioxidant called epigallocatechin gallate, or EGCG, as one brand of green tea tested. However, a recent report from ConsumerLab.com, which tests dietary supplements and nutritional products, suggests a more modest

benefit for matcha over regular green tea.

“You’ll get about two to three times more EGCG from matcha” than from regular green tea, says Tod Cooperman, president of ConsumerLab.com, of White Plains, N.Y. The company’s report on green teas was updated in October to include matcha. Popular brands tested include Teahouse Matcha from Rishi Tea Co., Milwaukee, Wis.; DoMatcha Organic Ceremonial Matcha from Canada’s Ecotrend Ecologics Ltd.; and Starbucks Corp.’s Teavana Imperial Grade Matcha.



Tools of the trade: Encha Ceremonial-Grade Organic Matcha, a cup and a bamboo scoop and whisk. *PHOTO: F. MARTIN RAMIN/THE WALL STREET JOURNAL, STYLING BY ANNE CARDENAS*

Matcha, which typically costs about \$2 a serving when prepared at home, is a centuries-old type of tea used in Japanese tea ceremonies. It has become trendy in recent years for its smooth, earthy flavor and its purported health benefits.

Matcha comes from the same species of plant as green leaf teas. Several weeks before picking, plants intended for some grades of matcha are partially shaded from sunlight, resulting in greater chlorophyll production and creating a rich, green color, says John Harrison, owner of EcoTrend. The dried leaves are ground into a powder and stored in airtight containers so the antioxidants don’t degrade, adds Li Gong, owner of Encha Life, San Francisco, which began importing matcha from Japan last year and wasn’t included in the ConsumerLab report.

To make a cup of matcha you add hot, but not boiling, water—companies recommend between 155 degrees and 175 degrees Fahrenheit. Tradition calls for a bamboo whisk to create a creamy froth. Matcha lovers also consume it as ice tea, or in smoothies—preferably with almond, soy or rice milk, because a protein in cow’s milk binds to the

catechins, reducing some of the health benefits, Mr. Harrison says.



A tin of Imperial Matcha Ceremonial Green Tea from Starbucks's Teavana. PHOTO: TEAVANA

There is little research on health benefits of matcha. Its claim to fame rests in part on the fact that, like green and other teas, it contains catechins —antioxidants, molecules believed to help reduce damage to cells. Catechins' contribution to

health is probably broader than that, says Chung S. Yang, a professor of chemical biology at Rutgers, the State University of New Jersey. For example, catechins may act on an enzyme that regulates metabolism, helping to control body weight, he says.

Research results on the chemicals in green tea for cancer prevention have been mixed, suggesting a weak effect, adds Dr. Yang, co-author of a 2013 article on prevention of chronic diseases by tea. However, the scientific literature suggests a benefit in prevention of diabetes, cardiovascular disease and weight loss—but only when at least 600 milligrams to 900 milligrams a day of catechins are consumed, the amount in three or four cups of green tea, he adds.

Some companies who sell matcha claim that, since people consume all of the leaf, they ingest more catechins. A 2003 study by researchers at the University of Colorado in Colorado Springs found the concentration of EGCG available from drinking matcha was 137 times as great as in one brand of green tea.

That number sounds far too high, says Dr. Yang, adding that his tests of green tea have found that nearly all catechins are in the tea water after 10 minutes of brewing. Shorter brewing times might leave some behind, he says. Companies who sell matcha also ship and sell the product in airtight containers, which they say prevent antioxidants from degrading.

Another possible benefit of matcha is the amino acid theanine. The shading process



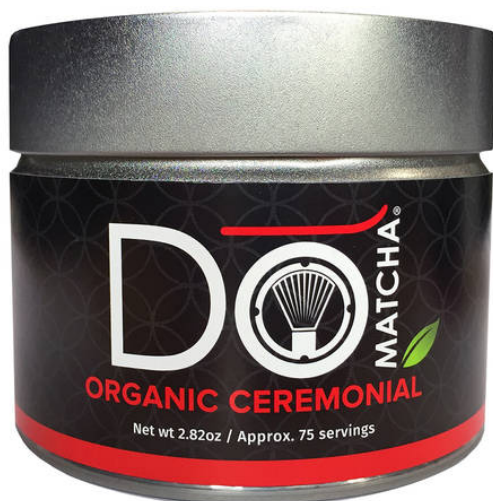
Organic Japanese Teahouse Matcha from Rishi. *PHOTO: RISHI*

creates more theanine in the leaves, giving the product a “lush, umami flavor,” says Rishi marketing director Jeffrey Champeau. A 2008 study of brain waves, published in the *Asia Pacific Journal of Clinical Nutrition*, found theanine helped induce a relaxed but alert mental state.

Jim White, a Virginia Beach, Va., dietitian and spokesman

for the Academy of Nutrition and Dietetics, a professional organization, says the catechin concentration in matcha makes it potentially healthy. But he warns against consuming too much, in part because the academy recommends a maximum of 300 milligrams daily of caffeine.

An 8-ounce cup of Teavana Imperial Grade Matcha, prepared as Starbucks recommends, contains 120 milligrams of caffeine, the company says. That compares with about 50 to 60 milligrams for a cup of brewed green tea, and 160 milligrams for a cup of medium roast brewed coffee, Starbucks says.



Matcha
can
cause

A tin of DōMatcha Organic Ceremonial matcha from Ecotrend Ecologics. *PHOTO: NAOKO (OHIRA) SEMBOKUYA*

stomach pain, particularly when a lot of powder is used to make a thick tea, say companies that sell the tea. Dr. Yang says dietary supplement tablets based on green tea

extracts have been shown to cause liver toxicity according to some case reports; although matcha hasn't been implicated, it is best to consume it in moderation, he says.

Another potential safety concern about matcha is possible contaminants in the ground leaves, such as lead and pesticides, says ConsumerLab's Dr. Cooperman. However, the company's analysis found no pesticides and negligible levels of heavy metals in the matcha teas it tested.

To alleviate concerns about potential radiation in matcha from the 2011 nuclear accident in Japan, Encha, DoMatcha, Teavana and Rishi organic have been tested for radiation, and no detectable levels have been found, the companies say.

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